USGS
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Earthquake Shaking — Green Alert
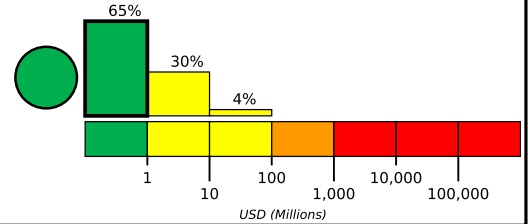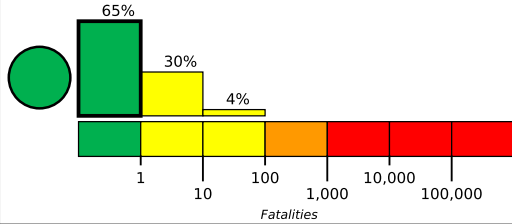
GSN
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FROM THE AMERICAN PEOPLE

M 4.1, 35 km NW of Toyah, Texas

Origin Time: 2021-12-16 12:25:24 UTC (Thu 06:25:24 local)
Location: 31.5535° N 104.0252° W Depth: 5.0 km

PAGER
Version 4

Created: 1 day, 0 hours after earthquake

Estimated Fatalities

65%
30%
4%

1   10   100   1,000   10,000   100,000
Fatalities

Green alert for shaking-related fatalities and economic losses. There is a low likelihood of casualties and damage.
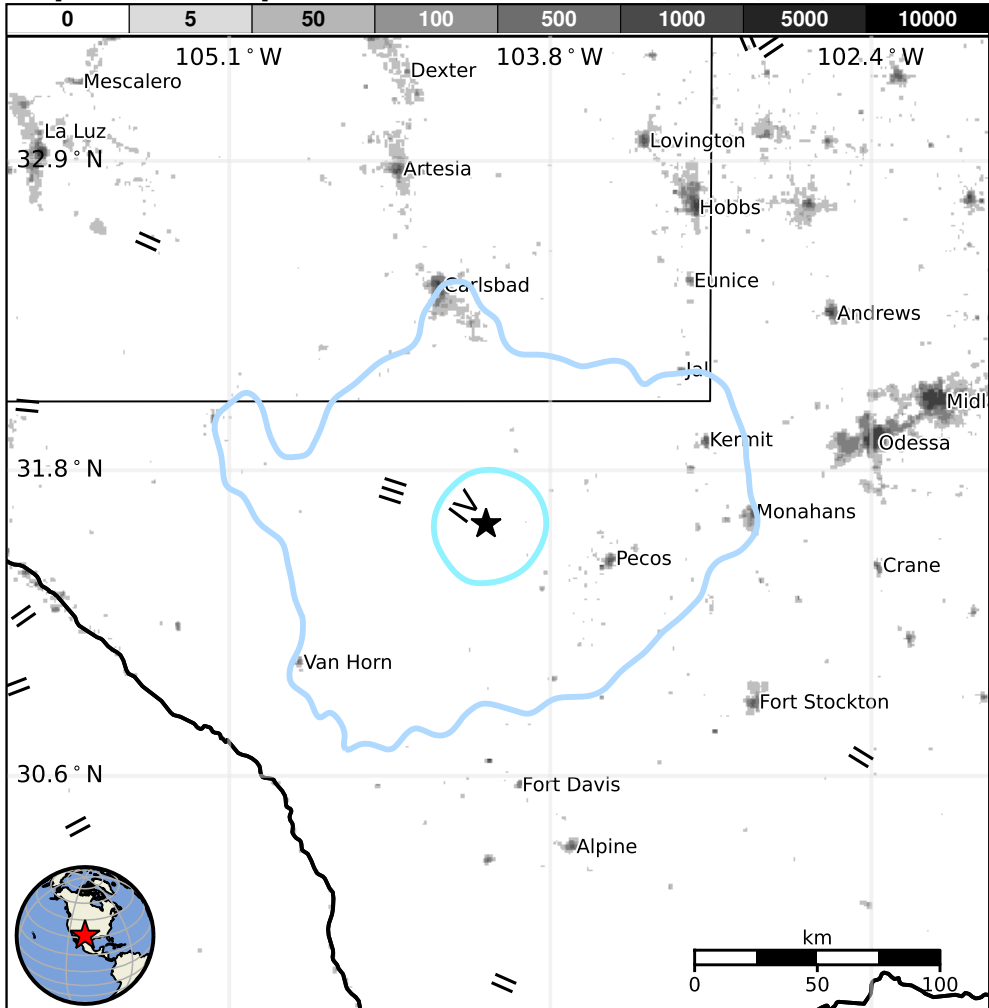
Estimated Economic Losses

65%
30%
4%

1   10   100   1,000   10,000   100,000
USD (Millions)

Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k=x1000)	–*	714k	0	0	0	0	0	0	0
ESTIMATED MODIFIED MERCALLI INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
POTENTIAL DAMAGE — Resistant Structures	None	None	None	V. Light	Light	Moderate	Mod./Heavy	Heavy	V. Heavy
POTENTIAL DAMAGE — Vulnerable Structures	None	None	None	Light	Moderate	Mod./Heavy	Heavy	V. Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure

population per 1 sq. km from Landscan

0	5	50	100	500	1000	5000	10000

Structures

Overall, the population in this region resides in structures that are resistant to earthquake shaking, though vulnerable structures exist. The predominant vulnerable building types are unreinforced brick masonry and reinforced masonry construction.

Historical Earthquakes

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
1978-06-16	347	5.3	IV(18k)	–
1992-01-02	123	5.0	V(4k)	–
1995-04-14	155	5.7	V(7k)	0

Selected City Exposure

from GeoNames.org

MMI	City	Population
III	Mentone	0
III	**Pecos**	**9k**
III	Loving	1k
III	**Kermit**	**6k**
III	**Van Horn**	**2k**
III	**Carlsbad**	**26k**
II	West Odessa	23k
II	**Odessa**	**100k**
II	**Hobbs**	**34k**
II	**Midland**	**111k**
II	Alamogordo	30k

bold cities appear on map.   (k = x1000)

PAGER content is automatically generated, and only considers losses due to structural damage.
Limitations of input data, shaking estimates, and loss models may add uncertainty.
https://earthquake.usgs.gov/earthquakes/eventpage/tx2021yope#pager

Event ID: tx2021yope